



Effect of mindfulness-based cognitive therapy on quality of life and self-efficacy in dialysis patients

Kamal Solati^{1*}, Saeed Mardani², Ali Ahmadi³, Sajad Danaei⁴

¹Department of Psychiatry, Social Determinants of Health Research Center, Shahrekord University of Medical Sciences, Shahrekord, Iran

²Department of Nephrology, Cancer Research Center, Shahrekord University of Medical Sciences, Shahrekord, Iran

³Department of Epidemiology, Modeling in Health Research Center, Shahrekord University of Medical Sciences, Shahrekord, Iran

⁴Student Research Committee, Shahrekord University of Medical Sciences, Shahrekord, Iran

ARTICLE INFO

Article Type:
Original Article

Article History:

Received: 25 February 2018

Accepted: 14 July 2018

Published online: 1 August 2018

Keywords:

Mindfulness-Based
Cognitive Therapy,
Dialysis, Quality of life,
Self-efficacy

ABSTRACT

Introduction: Amongst other problems, dialysis patients also present mental and psychological problems.

Objectives: In this study, we investigated the effect of mindfulness-based cognitive therapy (MBCT) on quality of life and self-efficacy in hemodialysis patients.

Patients and Methods: In a descriptive study, 50 hemodialysis patients undergoing dialysis in Hajar hospital were randomly selected and divided into two groups of experimental and control. The experimental group attended 2 to 2.5 hours treatment sessions according to the MBCT program. Before the intervention and two months after, the outcomes of the study, regarded as, quality of life and self-efficacy were evaluated using the 36-Item Short Form Health Survey (SF-36) and Sherer et al's General Self-efficacy Scale, respectively. Data were analyzed using descriptive statistics, independent t test, paired t test, and Wilcoxon test in the Stata software.

Results: The results indicated that 2 months after intervention, a decrease of 2.05 points in mean score for quality of life in the control group and an increase of 10.30 points in the intervention group at $P < 0.01$ significance level was detected. Furthermore, mean self-efficacy score increased by 0.95 in control group and 5.2 points in the intervention group at $P < 0.01$ significance level. While, the mean scores for quality of life and self-efficacy increased after intervention, the difference in the mean scores between the two groups was not statistically significant after intervention ($P > 0.05$).

Conclusion: The results of this study showed that the MBCT program resulted in an increase in the mean scores for quality of life and self-efficacy in hemodialysis patients.

Implication for health policy/practice/research/medical education:

The results of this study have shown that mindfulness-based cognitive therapy (MBCT) program increases the mean score of quality of life and self-efficacy in hemodialysis patients. Therefore, health care providers should apply this approach in hemodialysis patients in order to improve their health in general, and quality of life and self-efficacy, in particular.

Please cite this paper as: Solati K, Mardani S, Ahmadi A, Danaei S. Effect of mindfulness-based cognitive therapy on quality of life and self-efficacy in dialysis patients. J Renal Inj Prev. 2019;8(1):28-33. DOI: 10.15171/jrip.2019.06.

Introduction

Chronic kidney disease (CKD) causes several problems in affected individuals. Certain complications such as increased toxicity and hydration, increased cardiovascular disease incidence, hyperlipidemia, anemia, and metabolic bone disease occur due to dialysis which is used to remove waste materials from the blood (1,2). CKD patients are also prone to mental illness (3,4). Several treatment options such as psychiatric care are available to deal with such complications (5,6). Meanwhile, cognitive-behavioral therapies, due to their flexible structure and content can be used to treat various mental disorders, or at least to reduce stress and psychological symptoms in patients

with chronic and hard-to-treat diseases by addressing the attitudes and stigmas associated with these patients (7-10).

Mindfulness-based cognitive therapy (MBCT) is one of the effective treatments used to reduce mental stress and symptoms of mental disorders. This approach integrates meditational methods with the aim of making the patient aware of the present moment and moment-to-moment contact with changes in body and mind. Thereby increasing the individual's ability to control and cope with life-threatening events (11). The MBCT approach increases the flexibility of cognitive activities and decreases rumination overgeneralization in retrospective memory.

Furthermore, it decreases assessment of self-criticism and also increases cognitive processes such as non-judgmental observation of mental content. In this regard, patients are encouraged to process their experience without judgment as they have been formed and to modify their relationship with challenging thoughts and feelings and embrace them (12). In recent years, a widespread concept of health, in terms of improvement in quality of life has emerged (13). Quality of life encompasses a broad concept of feeling well and satisfied with life. Quality of life results from a personal evaluation of experiences gained throughout life (14). In chronic illnesses, the goal of treatment is to enhance the well-being of the patient and to extend his/her survival rate. Thus it is necessary to measure health-related factors associated with quality of life (15). One of the factors, can effectively reduce stress and improve quality of life is increasing self-efficacy via educational interventions (16). Self-efficacy is the belief in the merits of an individual to make an effort to undertake hard or new work, and the ability to overcome a particular and urgent situation (17). Bandura opines that self-efficacy refers to a person's belief that patient is capable of performing a particular action (18). By studying factors that influence self-efficacy, it is possible to provide conditions for individuals to recognize these factors and reinforce their beliefs. Furthermore, through verbal convincing, direct experiences, substitute experiences physiological states or otherwise their self-efficacy-related beliefs can be affected so that they can make correct judgments of their abilities and consequently, better deal with life problems and disease (18,19).

Objectives

Therefore, in view of the importance of psychotherapy in patients undergoing dialysis, we investigated the effect of MBCT on quality of life and self-efficacy in hemodialysis patients.

Patient and Methods

Study population

A study was conducted on patients undergoing dialysis in the Dialysis unit of Hajar hospital, Shahrekord, Southwest of Iran in 2017. The sample size for the study was 48 (20). However, 50 participants were enrolled to increase the accuracy of the study. Convenience sampling was used for sample selection and then the subjects were randomly assigned to one of two groups of intervention or control. Inclusion criteria included over 18 years of age, require dialysis treatment, ability to understand educational content, willingness and motivation to take action and participate in programs and also lack of physical illness or history of any specific disease that will interfere with the research implementation. Exclusion criteria included participation in psychological interventions in the past six months, severe psychiatric disorders such as psychosis and dementia, and dissatisfaction with participation in the study. According to the MBCT program, the intervention for the experimental group was 2 to 2.5-hour

treatment sessions, preceded by an introductory course of familiarization and evaluation.

The program was designed in a structured approach that included 45 minutes of daily practice, formal exercises, and on some days, unofficial mindfulness exercises. Sometimes, the participants recorded their observations of daily experiences. The general emphasis in the first half of the program was put on disregarding internal experiences and to observe what happens in the program. The second half of the program emphasized on its application on perceiving and understanding challenges in life through mindfulness exercises. The training provided to each participant was guided and supported through the presentation of session-specific guidelines, recording of training sessions, and a review of mindfulness exercises at home. As with the intervention group, quality of life and self-efficacy of the control group were measured by standard questionnaires. Afterwards, the data were analyzed along with those obtained from the intervention group.

The 36-item Short Form Survey (SF-36) was used to measure quality of life. Amongst the many questionnaires developed to assess quality of life, the most well-known is the SF-36.

The QOL questionnaire has 36 items and consists of 8 subscales with each subscale measured by 2-11 items. The eight subscales of this questionnaire are; 1) limitations in physical activities due to health problems; 2) limitations in social activities due to physical or emotional problems; 3) limitations in usual role activities due to physical health problems; 4) bodily pain; 5) general mental health (psychological distress and well-being); 6) limitations in usual role activities due to emotional problems; 7) vitality (energy and fatigue); and 8) general health perceptions. Furthermore, the integration of two general subscales, namely; physical and mental health are derived. In this questionnaire, lower scores represent lower quality of life and vice versa (21). Montazeri et al reported the reliability of this questionnaire in various dimensions from 0.7 to 0.9. In addition, the convergent validity test of the correlation between each question with the hypothesized scale also yielded favorable results while all the correlation coefficients exceeded the recommended value of 0.4 (22). A self-efficacy scale developed by Sherer et al contains 17 items which was used to collect self-efficacy data. This scale measures individual belief and ability to overcome different situations. The items on this questionnaire were rated on a 5-point Likert scale (23). To verify the validity of Sherer et al's General Self-efficacy Scale, the Cronbach's alpha coefficient was determined as 0.83 (24). Quality of life and self-efficacy of hemodialysis patients were assessed before and two months after the intervention, to better evaluate the intervention,

Ethical issues

The study was carried out in accordance with the Helsinki Declaration (2013) and ethical approval (IR.SKUMS.

REC.1369.7) was obtained from Shahrekord University of Medical Sciences for the protocol of this study. Informed consent was obtained from the patients. This paper was derived from a thesis approved by the Research and Technology Deputy of the Shahrekord University of Medical Sciences (# 2418).

Statistical analysis

Data analysis were carried out by the Stata software. Kolmogorov-Smirnov test was used to determine the normality of data and the results showed normally distributed data. The Wilcoxon test was used to compare values before and after the intervention while Mann-Whitney test was used to compare mean values of the two groups.

Pearson correlation coefficient was used to determine the relationship between self-efficacy and quality of life. $P < 0.05$ was considered as the significance level. In addition, the Monte Carlo method was used to accurately compare the groups before and after the intervention.

Results

The mean age of the control and case groups were 60.00 ± 9.87 years and 57.00 ± 8.32 years, respectively. In the control group, there were 20 patients (12 males and 8 females) and in the case group 10 patients (9 males and 1 female) was included. Based on the groups, the measurement time, and the total number of patients, mean (\pm standard deviation) scores of self-efficacy and quality of life are shown in Table 1.

The mean scores for quality of life in control and experimental groups before and after the intervention are shown in Table 2. According to the results, the mean score for quality of life in the control group significantly decreased by 2.5 points while in the case group, it significantly increased by 10.30 points at $P < 0.01$. The results also showed that prior to intervention, the mean scores for quality of life in two groups were not significantly

different ($P > 0.05$) (Table 2).

Mean of self-efficacy scores for the control and experimental groups before and after intervention are shown in Table 3.

According to the results, the mean score for self-efficacy in the control group increased by 0.95 points and was statistically significant ($P < 0.01$). In the case group, mean self-efficacy score increased by 5.2 points was statistically significant ($P < 0.01$).

The relationship between self-efficacy and quality of life before and after the intervention in the intervention group are shown in Table 4. The results show no significant correlation between quality of life and self-efficacy before and after intervention (Table 4).

Table 5 shows that in the control group, there was a significant correlation between self-efficacy and quality of life before ($r = 0.625$ and $P = 0.01$) and after intervention ($r = 0.663$ and $P = 0.01$).

Discussion

The aim of this study was to determine the effectiveness of MBCT on quality of life and self-efficacy in patients undergoing dialysis. The results of the study showed that MBCT program increased the mean score for quality of life and self-efficacy in hemodialysis patients in each group (before and after intervention). However, in spite of an increase in mean scores for quality of life and self-efficacy after intervention, the difference between two groups after intervention was not statistically significant. Other studies have shown the effectiveness of the MBCT program on quality of life in people with chronic diseases and are in agreement with the current study.

In a study by Ghashghaie et al, the MBCT in 8 sessions of 2 hours each, improved quality of life in type II diabetic patients (25). In another study to investigate the effectiveness of MBCT on quality of life and mental status of patients with HIV infection, symptoms such as quality of life, mental stress, depression, and anxiety in

Table 1. Mean (\pm standard deviation) scores of self-efficacy and quality of life based on groups, measurement time, and the number of patients

Groups		Total	Intervention	Control
		Mean \pm SD	Mean \pm SD	Mean \pm SD
Quality of life	Pre-test	67.7 \pm 15.4	61 \pm 10.04	71.1 \pm 16.68
	Post-test	61.8 \pm 14.3	71.3 \pm 14.3	69.05 \pm 14.6
Self-efficacy	Pre-test	40.7 \pm 9.1	33.4 \pm 5.9	44.4 \pm 8.2
	Post-test	41.8 \pm 8.3	38.6 \pm 7.5	43.4 \pm 8.3

Table 2. Mean quality of life in the case and control groups before and after intervention

Groups	Pre-test	Post-test	Wilcoxon P value	Monte Carlo P value
	Mean \pm SD	Mean \pm SD		
Interventional group	61.00 \pm 10.04	71.30 \pm 14.39	0.007*	0.003*
Control group	71.10 \pm 16.68	69.05 \pm 14.60	0.03*	0.03*
Mann-Whitney U (P value)	0.053	0.741		
Monte Carlo (P value)	0.052	0.756		

* $P < 0.05$ was considered significant.

Table 3. Mean score for self-efficacy in intervention and control groups before and after intervention

Groups	Pre-test	Post-test	Wilcoxon P value	Monte Carlo P value
	Mean±SD	Mean±SD		
Interventional group	33.40±5.92	38.60± 7.56	0.007*	0.003*
Control group	44.40±8.29	43.45±8.39	0.03*	0.03*
Mann-Whitney U (P value)	0.001*	0.085		
Monte Carlo (P value)	0.003*	0.091		

*P < 0.05 was considered significant.

Table 4. The relationship between quality of life and self-efficacy in the intervention group

Variable	Self-efficacy (Pre-test)	Self-efficacy (Post-test)	Quality of life (Pre-test)	Quality of life (Post-test)
Self-efficacy (Pre-test)	1	r = 0.740, P = 0.01	r = 0.461, P = 0.180	r = 0.419, P = 0.228
Self-efficacy (Post-test)	r = 0.740, P = 0.01	1	r = 0.512, P = 0.130	r = 0.417, P = 0.230
Quality of life (Pre-test)	r = 0.461, P = 0.180	r = 0.512, P = 0.130	1	r = 0.431, P = 0.214
Quality of life (Post-test)	r = 0.419, P = 0.228	r = 0.417, P = 0.230	r = 0.431, P = 0.214	1

Table 5. The relationship between quality of life and self-efficacy in the control group

Variable	Self-efficacy (Pre-test)	Self-efficacy (Post-test)	Quality of life (Pre-test)	Quality of life (Post-test)
Self-efficacy (Pre-test)	1	r = 0.950, P = 0.00	r = 0.526, P = 0.01	r = 0.607, P = 0.00
Self-efficacy (Post-test)	r = 0.950, P = 0.00	1	r = 0.566, P = 0.00	r = 0.653, P = 0.00
Quality of life (Pre-test)	r = 0.526, P = 0.01	r = 0.566, P = 0.00	1	r = 0.957, P = 0.00
Quality of life (Post-test)	r = 0.607, P = 0.00	r = 0.653, P = 0.00	r = 0.957, P = 0.00	1

the MBCT group significantly improved in comparison with the control group after intervention (26). It has also been observed that patients with a history of depression, the MBCT program along with the routine treatment were more effective in treating depression relapse, mental health, and quality of life than the routine treatment alone (27). In another study on patients with irritable bowel syndrome, the MBCT program was shown to significantly improve quality of life (28).

In a similar study on general health and quality of life associated with cancer, it was reported that upon completion of MBCT program, the test group experienced a significant improvement in five out of eight subscales in the SF-36 quality of life scale (29).

The efficacy of MBCT in lactating women was investigated by Perez-Blasco et al (30). They observed that undergoing 8 sessions of the program significantly improved mothers' self-efficacy, mental happiness and life satisfaction in addition to reduced psychological stress. The MBCT program resulted in a significant reduction in stress symptoms in unemployed youths and a significant increase in focusing on daily activities and consequently, increased self-confidence in having a job (31). In the study by Prevedini et al, a significant improvement in self-efficacy in seizure patients based on the Sherer et al's General Self-efficacy Scale after 8 sessions of MBCT was reported (32). It is therefore deduced that the effectiveness of MBCT program in various studies is due to the fact that mindful treatment results in a cognitive change in patient's thinking and action patterns and he/she benefits from the principles of conditional reinforcement.

Therefore, the person struggling to move on to the next

step tries to see him/herself in a higher step, and this tendency continually leads to gradual improvement. Furthermore, while calm and conscious, the patient continues to be treated and solves deficiencies (29). It can also be argued that mindfulness helps to modify feelings without judgment thereby increasing awareness of psychological and physical emotions in individuals to clearly perceive and accept emotions and physical phenomena as they happen. It can thus play an important role in modulating the mental health scores of patients. Findings have revealed that mindfulness contributes to modulating negative behaviors and thoughts thus, leads to positive healthy behaviors. Therefore mindful treatment increases the attention of individuals to physical and mental feelings and leads to the feeling of trust in life, deep sympathy, and real acceptance of life events.

In life, people learn to deal with emotions and negative thoughts by experiencing mental events in a positive manner.

Conclusion

The results of this study have shown that MBCT program increases the mean score of quality of life and self-efficacy in hemodialysis patients. Therefore, health care providers should apply this approach in hemodialysis patients in order to improve their health in general, and quality of life and self-efficacy, in particular. Meanwhile, for subsequent studies, it is suggested that patients follow-up should be for a longer duration and that this psychological method can be implemented in the treatment of mental conditions in other chronic diseases.

Limitations of the study

The limitations of this study included the short duration of follow-up, therefore, the long-term effects of cognitive-based therapy could not be measured.

Authors' contribution

KS, SM, AH and SD performed the research and contributed to design of the study. KS prepared the primary draft. AH contributed to data analysis. KS and SM edited the final draft.

Conflicts of interest

The authors declare no conflict of interest.

Ethical considerations

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authors.

Funding/Support

This article is a part of a research project approved by the Research and Technology Deputy of the Shahrekord University of Medical Sciences (approval No. 2418).

Reference

1. Thomas R, Kanso A, Sedor JR. Chronic Kidney Disease and Its Complications. *Prim Care*. 2008;35:329-vii. doi: 10.1016/j.pop.2008.01.008.
2. Vadakedath S, Kandi V. Dialysis: A Review of the Mechanisms Underlying Complications in the Management of Chronic Renal Failure. *Cureus*. 2017;9:e1603. doi: 10.7759/cureus.1603.
3. Teles F, de Azevedo VFD, de Miranda CT, de Melo Miranda MP, do Carmo Teixeira M, Elias RM. Depression in hemodialysis patients: the role of dialysis shift. *Clinics*. 2014;69:198-202. doi: 10.6061/clinics/2014(03)10.
4. King-Wing Ma T, Kam-Tao Li P. Depression in dialysis patients. *Nephrology (Carlton)*. 2016;21:639-46. doi: 10.1111/nep.12742.
5. Levin A, Hemmelgarn B, Culleton B, Tobe S, McFarlane P, Ruzicka M, et al. Guidelines for the management of chronic kidney disease. *CMAJ*. 2008;179:1154-62. doi: 10.1503/cmaj.080351
6. Mahdavi A, Gorji MAH, Gorji AMH, Yazdani J, Ardebil MD. Implementing Benson's Relaxation Training in Hemodialysis Patients: Changes in Perceived Stress, Anxiety, and Depression. *N Am J Med Sci*. 2013;5:536-40. doi: 10.4103/1947-2714.118917.
7. Navarrete-Navarrete N, Peralta-Ramírez M, Sabio-Sánchez J, Coín M, Robles-Ortega H, Hidalgo-Tenorio C, et al. Efficacy of cognitive behavioural therapy for the treatment of chronic stress in patients with lupus erythematosus: a randomized controlled trial. *Psychother Psychosom*. 2010;79:107-15. doi: 10.1159/000276370.
8. Solati K, Ja'farzadeh L, Hasanpour-Dehkordi A. The efficacy of stress management based on group cognitive-behavioural therapy on mental health and marital satisfaction in infertile women. *J Clin Diagn Res*. 2016;10:VC01-VC3. doi: 10.7860/JCDR/2016/17836.8077.
9. Solati K. Effectiveness of Cognitive-Behavior Group Therapy, Psycho-education Family, and drug Therapy in Reducing and Preventing Recurrence of Symptoms in Patients with Major Depressive Disorder. *J Chem Pharm Sci*. 9:3414-18.
10. Solati K. The Efficacy of Mindfulness-Based Cognitive Therapy on Resilience among the Wives of Patients with Schizophrenia. *J Clin Diagn Res*. 2017;11:VC01-VC3. doi: 10.7860/JCDR/2017/23101.9514.
11. Segal ZV, Teasdale JD, Williams JMG. *Mindfulness-Based Cognitive Therapy: Theoretical Rationale and Empirical Status*. New York: Guilford Press; 2004.
12. Segal ZV, Williams JMG, Teasdale JD. *Mindfulness-based cognitive therapy for depression*. New York: Guilford Press; 2012.
13. Post MW. Definitions of Quality of Life: What Has Happened and How to Move On. *Top Spinal Cord Inj Rehabil*. 2014;20:167-80. doi: 10.1310/sci2003-167
14. Janssens AC, Van Doorn P, De Boer J, Kalkers N, van der Meché FG, Passchier J, et al. A anxiety and depression influence the relation between disability status and quality of life in multiple sclerosis. *Mult Scler*. 2003;9:397-403. doi: 10.1191/1352458503ms930oa
15. Wong FM, Sit JW, Wong EM, Choi KC. Factors associated with health-related quality of life among patients with implantable cardioverter defibrillator: identification of foci for nursing intervention. *J Adv Nurs*. 2014;70:2821-34. doi: 10.1111/jan.12434.
16. Haugland T, Veenstra M, Vatn MH, Wahl AK. Improvement in Stress, General Self-Efficacy, and Health Related Quality of Life following Patient Education for Patients with Neuroendocrine Tumors: A Pilot Study. *Nurs Res Pract*. 2013;2013:695820. doi: 10.1155/2013/695820.
17. Cross MJ, March LM, Lapsley HM, Byrne E, Brooks PM. Patient self-efficacy and health locus of control: relationships with health status and arthritis-related expenditure. *Rheumatology (Oxford)*. 2006;45:92-6. doi: 10.1093/rheumatology/kei114.
18. Bandura A. Perceived self-efficacy in cognitive development and functioning. *Edu Psychol*. 1993;28:117-48. doi: 10.1207/s15326985ep2802_3
19. Somers TJ, Kurakula PC, Criscione-Schreiber L, Keefe FJ, Clowse ME. Self-efficacy and pain catastrophizing in systemic lupus erythematosus: Relationship to pain, stiffness, fatigue, and psychological distress. *Arthritis Care Res (Hoboken)*. 2012;64:1334-40. doi: 10.1002/acr.21686.
20. Haghi A, Salimi S, Dabaghi P, M R. The effectiveness of mindfulness based cognitive therapy on quality of life in military personnel. *J Nurs Physici Within War*. 2014;2:67-73.
21. Zhang Y, Qu B, Lun S-s, Guo Y, Liu J. The 36-Item Short Form Health Survey: Reliability and Validity in Chinese Medical Students. *Int J Med Sci*. 2012;9:521-6. doi: 10.7150/ijms.4503.
22. Montazeri A, Gashtasbi A, Vahdaninia M. Translation, reliability and validity of Persian standard tool SF-36. *Payesh*. 2005;5:49-56.
23. Sherer M, Maddux JE, Mercandante B, Prentice-Dunn S, Jacobs B, Rogers RW. The self-efficacy scale: Construction and validation. *Psychological reports*. 1982;51:663-71. doi: 10.2466/pr0.1982.51.2.663.

24. Asgharnejad T, Ahmadi dah Qutb al-Dini M, Farzad V, Khodapanahi M. Psychometric properties of the scherer self efficacy scale. *Psychology*. 2006;10:269-74.
25. Ghashghaie S, Farnam R. The Effectiveness Of Mindfulness-Based Cognitive Therapy On Quality-Of-Life In Outpatients With Diabetes. *Iranian J Diabetes Metab*. 2014;13:319-30.
26. Gonzalez-Garcia M, Ferrer MJ, Borrás X, Muñoz-Moreno JA, Miranda C, Puig J, et al. Effectiveness of mindfulness-based cognitive therapy on the quality of life, emotional status, and CD4 cell count of patients aging with HIV Infection. *AIDS Behav*. 2014;18:676-85. doi: 10.1007/s10461-013-0612-z.
27. Godfrin KA, van Heeringen C. The effects of mindfulness-based cognitive therapy on recurrence of depressive episodes, mental health and quality of life: A randomized controlled study. *Behav Res Ther*. 2010;48:738-46. doi: 10.1016/j.brat.2010.04.006.
28. Schoultz M, Atherton IM, Hubbard G, Watson AJ. The use of mindfulness-based cognitive therapy for improving quality of life for inflammatory bowel disease patients: study protocol for a pilot randomised controlled trial with embedded process evaluation. *Trials*. 2013;14:431. doi: 10.1186/1745-6215-14-431.
29. Roth B, Robbins D. Mindfulness-based stress reduction and health-related quality of life: findings from a bilingual inner-city patient population. *Psychosom Med*. 2004;66:113-23. doi:10.45700.7337900000.YSP.10/7901.0 :
30. Perez-Blasco J, Viguer P, Rodrigo ME. Effects of a mindfulness-based intervention on psychological distress, well-being, and maternal self-efficacy in breast-feeding mothers: results of a pilot study. *Arch Womens Ment Health*. 2013;16:227-36. doi: 10.1007/s00737-013-0337-z.
31. de Jong A, Hommes M, Brouwers A, Tomic W. Effects of mindfulness-based stress reduction course on stress, mindfulness, job self-efficacy and motivation among unemployed people. *AJCD*. 2013;22:51-62. doi: 10.1177/1038416213486095.
32. Prevedini AB, Presti G, Rabitti E, Miselli G, Moderato P. Acceptance and commitment therapy) ACT): the foundation of the therapeutic model and an overview of its contribution to the treatment of patients with chronic physical diseases. *G Ital Med Lav Ergon*. 2011;33:A53-63.

Copyright © 2019 The Author(s); Published by Nickan Research Institute. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.